

IN THE CLAIMS:

1. (Currently amended) An apparatus for performing dip coating of a layer of a resist material on a pair of opposed surfaces of a substrate, comprising:

a dip coating vessel having an interior space adapted for containing therein a liquid for said dip coating, said dip coating liquid comprising a solution of said resist material in a solvent, said dip coating vessel being open at the top thereof;

a substrate mounting means for introducing into and withdrawing a substrate from said interior space of said dip coating vessel *via* said open top, said substrate mounting means including: (1) means for vertically mounting a disk-shaped substrate comprising a pair of oppositely facing major surfaces to be simultaneously dip coated by immersion in a said liquid contained in said dip coating vessel, and (2) means for rotating said disk-shaped substrate about a central axis; and

a viscosity control system for monitoring and maintaining the viscosity of a dip coating liquid supplied to said dip coating vessel at a predetermined value.

2. (Original) The apparatus as in claim 1, wherein:

said viscosity control system includes a recirculation loop for continuously or periodically recirculating said dip coating liquid in said dip coating vessel.

3. (Original) The apparatus as in claim 2, wherein:

said recirculation loop includes a reservoir for said dip coating liquid, with an inlet conduit connected between said reservoir and said dip coating vessel for supplying dip coating liquid from said reservoir to said dip coating vessel, and an outlet conduit

connected between said dip coating vessel and said reservoir for returning dip coating liquid from said dip coating vessel to said reservoir.

4. (Original) The apparatus as in claim 3, wherein:

said recirculation loop provides periodic recirculation of said dip coating liquid in said dip coating vessel and comprises a bypass conduit for periodically diverting, thus interrupting, flow of said dip coating liquid between said reservoir and said dip coating vessel.

5. (Original) The apparatus as in claim 4, wherein:

said recirculation loop provides recirculation of said dip coating liquid in said dip coating vessel only when a substrate is immersed in said dip coating liquid in said dip coating vessel and includes a pair of 3-way flow control valves for flowing said dip coating liquid through said bypass conduit in response to a signal provided by said substrate mounting means.

6. (Original) The apparatus as in claim 3, wherein:

said recirculation loop further includes a pump connected to said inlet conduit for recirculating said dip coating liquid.

7. (Original) The apparatus as in claim 3, wherein:

said recirculation loop further includes a filter connected to said inlet conduit for removing particulate matter from said dip coating liquid.

8. (Original) The apparatus as in claim 3, wherein:

said recirculation loop includes a viscosity measuring device for continuously measuring the viscosity of said dip coating liquid in said reservoir and a solvent dispensing system for supplying said solvent for said resist material to said reservoir in response to the measured viscosity.

9. (Original) The apparatus as in claim 8, wherein:

said solvent dispensing system includes a tank for containing said solvent and a conduit between said solvent tank and said reservoir for supplying a flow of solvent from said solvent tank to said reservoir.

10. (Original) The apparatus as in claim 9, wherein:

said solvent dispensing system further includes a valve for controlling the flow of solvent in said conduit between said solvent tank and said reservoir, and valve flow control means responsive to the measured viscosity for controlling said solvent flow and thereby maintaining said predetermined viscosity of said dip coating liquid in said reservoir and in said dip coating vessel.

11. (Original) The apparatus as in claim 8, wherein:

said reservoir further includes agitator means for uniformly mixing solvent supplied by said solvent dispensing system with said dip coating liquid in said reservoir.

12 - 24 (Cancelled)